AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims:

Claims 1-15 (canceled).

16. (New) A sensor element for a sensor for determining an oxygen concentration in an exhaust gas of an internal combustion engine, the sensor element comprising:

a solid electrolyte having a cavity formed inside;

an inner electrode located in the cavity;

an outer electrode located on the outside of the solid electrolyte and exposed to the exhaust gas, the outer electrode forming a pump cell together with the solid electrolyte and the inner electrode;

a prechamber formed inside the solid electrolyte, the prechamber having an access opening for the exhaust gas;

a diffusion channel formed inside the solid electrolyte, the diffusion channel comprising an intake opening toward the prechamber and an exit opening toward the cavity, the diffusion channel being filled with a diffusion barrier; and

a catalytic converter located in the prechamber.

17. (New) The sensor element of Claim 16, wherein the catalytic converter is a chemical catalytic converter.

18. (New) The sensor element of Claim 17, further comprising a packing made of an oxidation-promoting catalyst material, the packing substantially filling the prechamber.

19. (New) The sensor element of Claim 16, wherein the catalytic converter is an electrochemical catalytic converter.

20. (New) The sensor element of Claim 19, wherein the catalytic converter includes two electrodes made of a precious metal, each electrode being supported by a wall of the

prechamber such that the two electrodes are supported on opposing walls of the prechamber, the electrodes being electrically connected to one another.

21. (New) The sensor element of Claim 20, wherein the electrodes of the catalytic converter further include an oxidation-promoting oxide.

22. (New) The sensor element of Claim 20, wherein the walls of the prechamber supporting the electrodes of the catalytic converter are substantially parallel to a center axis of the access opening of the prechamber and to a center axis of the intake opening of the diffusion channel.

23. (New) The sensor element of Claim 22, wherein the center axis of the access opening of the prechamber and the center axis of the intake opening of the diffusion channel are aligned with each other.

24. (New) The sensor element of Claim 16, wherein a cross section of the prechamber is substantially larger than a cross section of the diffusion barrier.

25. (New) The sensor element of Claim 20, wherein the electrodes of the catalytic converter are configured to be one of permanently and intermittently connected to a selected DC potential during the operation of the sensor, the selected DC potential being higher than a potential of the outer electrode.

26. (New) The sensor element of Claim 20, wherein the electrodes of the catalytic converter further include a cermet, the cermet coating the surfaces of the electrodes of the catalytic converter, the cermet being formed by an electrochemical forming process from the electrode material and the material of the solid electrolyte.

27. (New) A method for forming electrodes of a catalytic converter in a sensor element for a sensor for determining an oxygen concentration in an exhaust gas of an internal combustion engine, the sensor element including a solid electrolyte having a cavity formed inside; an inner electrode located in the cavity; an outer electrode located on the outside of the solid electrolyte and exposed to the exhaust gas, the outer electrode forming a pump cell together

with the solid electrolyte and the inner electrode; a prechamber formed inside the solid electrolyte, the prechamber having an access opening for the exhaust gas; a diffusion channel formed inside the solid electrolyte, the diffusion channel comprising an intake opening toward the prechamber and an exit opening toward the cavity, the diffusion channel being filled with a diffusion barrier; the catalytic converter being located in the prechamber, the catalytic converter being an electrochemical catalytic converter, the catalytic converter including two electrodes made of a precious metal, each electrode being supported by a wall of the prechamber such that the two electrodes are supported on opposing walls of the prechamber, the electrodes being electrically connected to one another, the method comprising:

applying a selected DC voltage to the electrodes of the catalytic converter and to the outer electrode, the DC voltage having a higher potential at the outer electrode.

28. (New) The method of Claim 27, wherein the DC voltage is higher than a decomposition voltage of the material of the solid electrolyte.

29. (New) The method of Claim 27, further comprising:

heating the solid electrolyte to a temperature of between 800°C and 1200°C.

30. (New) The method of Claim 27, wherein the duration of the application of the DC voltage to the electrodes of the catalytic converter is at least one minute.

31. (New) The method of Claim 27, further comprising:

repeating the application of the DC voltage to the electrodes of the catalytic converter while the sensor is in use.